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ALGORHYTHMIC HORIZION

MASHINES   ACCELERATION, CAPITAL, FINANCE, PLATFORMS, TECHNOLOGY, THE STACK, VECTORIAL POWER

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A small remark in the third volume of Marx's *Capital* (1894) edited by his friend Engels, usually overlooked, says that telegraph wires, together with steamboat lines and the railway are the chief means of capitalistic machinery. Improved communication combined with better transportation leads to reductions in circulation time of goods and its turnaround time. This generates faster profits[1] and leads to an immense growth of capital. Telegraphy disrupted not only things at the periphery of capitalism, but also right in the centre. At around the same time as Marx's *Capital*, Thomas Edison invented the Universal Stock Ticker, an early form of digital electronic medium of communication, that would act as the technological catalyst establishing Wall Street as a global financial hub. Today, average transmission speeds of financial data between Chicago Mercantile Exchange and New York Stock Exchange are not only determined by where the server farms and computing centres of hedge funds are located, but also by how fast algorithmic trading is allowed to operate.

AN ALTERNATIVE HORIZON?

'Communism' failed. At least this is the most widely shared narrative. Jodi Dean is one of those voices contradicting this — calling for a new "communist horizon". Based on post-structuralist theory, Dean writes about "people" and "proletarianisation", not *the* people, but people like me, maybe like you. People is not meant in a populist sense as homogenous, but instead as polymorphous entity, dynamic and contradicting. Proletarianisation is "the process through which capitalism produces, uses up, and discards the workers it needs"[2] and therefore degrades people from skilled workers into powerless servants with no options for self-determination and design. Our daily routines, behaviours, rules, values and cultures are attuned to monetise social substances, relations and networks. There is no proletariat, only proletarianisation — proletarianisation by wiring.

Wires store, transmit and process information, signals and data. Early magnetic recorders were made with wires not tapes. Wires are key components of what Dean calls "communicaative capitalism". It consists of circuits and "loops of drive",[3] creating rhythmic pulsations, forward and backward, oscillations between excitation and exhaustion — more speed, more connections,

more friends, more money.

TAPPING INTO WIRES

While movements such as Occupy have definitely used communicative networks and screens, their main medium of communication is "actions in the streets."[4] This is not enough. Following earlier attempts like those of the American counterculture during the late 1960s around the "Whole Earth Catalog", and other projects of "Hippie Modernism"[5] and many of recent attempts, projects and collectives such as Tiqqn, #altwoke, #accelerate, telekommunisten, Xenofeminism, Open Making Society and other pretty diverse expressions groups, which are against proletarianization of people, I would like to call for a critical immersion into the wire and wiring. For a more technologically-informed, agent-focused and sometimes micro political communism leftist radicals especially theory-driven intellectuals should no longer ignore software studies, algorithms and platform capitalism. Skilled programmer activists should put more effort to disseminate their knowledge to their communities and teach everybody how to write algorithms and how to exploit things in a sustainable manner.

We are no longer determined by the sovereignty of states and governments, but as media and design theorist Benjamin Bratton argues, by computational platforms based on a planetary-scale mega-infrastructure he calls "the Stack". The Stack has six layers: user, interface, address, city, cloud, earth.[6] Using the Stack as a model for theoretical analysis is not unusual, since communication protocols such as TCP/IP — the basis of the Internet — have long been conceptualised by communication engineers with similar stack-based models in mind.Because networks are ubiquitous, stacks are ubiquitous. Following early work by Alexander Galloway[7] on web-communication protocols, I have concentrated mostly on the physical and material layer of such stacks and developed the notion of *algorhythmics* combining the word algorithm with rhythm, not by accident, but with a media archaeological intention.

ALGORITHMS and ALGORHYTHMS[8]

Algorhythmics — the non-human music of wired capital — is a concept, that arises at the communist's horizon. It is made after old Marxist Henri Lefebvre's rhythmanalysis, a way to understand urban dynamics.[9] While rhythmanalysis has been a thinking tool for urbanism in the age of film, sound recordings, TV and other analogue media, algorhythmics is a tool and concept to understand and design our life after the neoliberal "digital revolution". Algorhythmics is a conceptual vehicle that wants to break through the black box of software, communication protocols, algorithmic supremacy and platform capitalism.

Algorithms create crucial, but problematic relationships between abstract mathematical operations and material reality. They organise matter and while doing so they generate patterns, rhythms and effects. Rhythm is the order of movement, of circulation. Rhythm is the timing of matter, bodies and signals in wires for example. Algorithms are mathematical, symbolic and abstract structures, but they are not purely mathematical. Instructions operated by algorithms are non-reversible. They are vector-dependent, they have gradients, they need unfolding, thus they embody time. This crucial difference, as trivial it seems, is of great relevance for understanding our current dependence on algorithmically-driven systems.

Computation involves rhythms. We can sometimes hear them. That is the literal meaning of algorhythm. Twenty years ago, you could hear the tone of the signal in your wired telephone. Forty years ago, you had data music on datasettes used for example by the Commodore 64. Go back sixty years ago and serious engineers and computer scientists were literally listening to software processes searching for feedback from their otherwise silent giant computers. They attached a wire to data storage's sockets and connected them to a loudspeaker-amplifier system. Their ears were wired in cyberspace. In parallel phone 'phreaks' — a sensational term based on 'freak', to describe the people who explore and experiment with phone systems — were listening to the clicks and beeps of telephone networks building forerunners of today's hackers. As wired phone phreaks they freaked out, while joining party lines for free, staying the nights awake. Some of us might remember the sound of a mobile phone ten years ago, when it was placed close to an audio system: dactylic rhythms creating faint resemblances to Beethoven's famous 'Vivace' in his seventh symphony. More recently, I have been collecting plenty of these rhythms under the labelling *sonic archaeology* (videos).

BEING WIRED

Our computers, smartphones, social networks and banking services are driven by algorithms. Our bodies are also all wired up: electrodes are measuring our heartbeat, our body resistance, detecting signals from our nerves, muscles and brain. Every aspect of our body functions can be recorded, our nerves are organic wires. Since the 1930s, if not before, scientists have been modelling our nerves as combinations of electric resistances and capacitors[10]. As early as the 19th century, German pioneers in physiology such as Hermann von Helmholtz, Emil du Bois-Reymond or Julius Bernstein have used the concept of telegraphy for describing the conduction of a nerve signal. With the invention of the telephone around 1880, they started along with other neurologists to listen to nerves and brains.[11] For the last two centuries at least, science has been driven by new models of communication to study the human body. Modulated by Mid-20th century's new media machinery this led to the 1960s electric experimentations with tape loop machines, voice-delay-feedback-sessions and analogue synthesizer gatherings like the 1966 Trip Festival melting psychedelics with cybernetics. Here being wired as being on drugs and being connected fulfilled its double meaning in a quite literal meaning. Control and Communication not only of animals and machines, but also humans. Being wired not only to machines, but to yourself. Alvin Lucier did exactly this in 1965 with *Music for Solo Performer*. Listening to

your brain making music and thus feeding back.

"Communicative capitalism", which is the commodification of entities by drawing them into communication circuitry, doesn't stop at our skins, it also dissolves our bodies into values and numbers. Marx was right in observing that the reduction of goods circulation time was due to better communication and thus was an accelerating factor for the boom of capital, but the research conducted by the physiologists mentioned earlier (at around the same time as Marx's *Capital*) has enabled the commodification of body functions. Nowadays, we can do this value-creation by ourselves, using sensor-equipped wrists, watches and connect directly to an online database in the cloud.

Algorithms do not only analyse body data, but they design sensations. The cochlear implant is the most advanced popular technology of this field. It is a crucial aid for severely hearing-impaired people. It consists of a little piece of hardware behind your hear animated by a computational analysis of sound signals around you. The implant, which is connected to the processor via short distance radio, appropriately simulates the electrodes surgically placed in the inner ear of their bearers. The medium is not the message, but the massage.[12] *Algorhythms* timed by the cochlear implant are meant for an increase of life quality, but this situation still reduces the patient's amount of self-determination. Patients are not allowed to change their software for their hearing. They need to consult a specialist. German media theorist Friedrich Kittler called this phenomenon "protected mode", [13] a loss of control in exchange for usability.

WIRED GAIA — UNCONTROLLED VECTORIAL POWERS

The dawn of "communicative capitalism" has not only major consequences for individuals, but for the whole planet. Algorithms can exchange data between each other. Data can then turn to algorithms and vice versa. Algorhythmics is not only a conception tool, a thinking model to understand one-to-one processes, but offers furthermore insight into networked effects, social aspects. Coming back to Bratton's "Stack", planetary interconnectedness transforms the earth into a complex organism: a vast living techno-ecosystem with a limitless set of heterogeneous rhythms and patterns. A dynamic, but inscrutably complex assemblage of agents such as algorhythms, chemicals, wires, machines, humans, animals, plants, landscapes, continents, oceans and other things circulating, processing or resting.

Bratton's model of "the Stack" is proposing a spatial metaphor, but algorhythmics is a time-based model. Algorhythmics draws the attention and sensitivity towards aspects of timing and process rather than structure or architecture. People for example are simply much bigger and heavier than electrons, signals and information. That is the reason why powerful agents can restrict the migration and circulation of humans, but not those of information. Information is freed more easily than people, still it is increasingly "in chains".[14] The chains of privatisation do not mean that the flow of circulation, the rhythms of its activity has ceased — it means quite the opposite: deregulation, acceleration, faster rhythms, more money, more crashes. Marxist media scholar McKenzie Wark speaks here of a "Vectorialist class", which controls "the vectors along which information circulates. They own the means of realizing the value of information."[15] Are scientists merely servers for such a Vectorialist class?

Vectors not only control the direction of circulation, but also their timing. They create differences of speed and these get exploited. Vector is latin for carrier or transporter. Usually this carrier has a direction, a gradient, it is falling or climbing, never in balance. Algorithms are creating vectors as well. Not only a group of people can control vectors, but there are vectorial powers beyond human scope such as the power of environmental catastrophes. Sometimes, and this is the point here, algorithms create unintended vectors. Unforeseen networked catastrophes emerge. The Flash Crash of May 6, 2010 is a famous example caused by the complex interplay of different agents including high-frequency or algorithmic traders, i.e. machines. Stock indexes collapsed and bounced back very rapidly, within less than one hour. The problem with high-frequency or algorithmic trading is not only that is its operating inhumanly fast, but that collapse is preprogramed. The competitive actions in algorithmic trading are programmed to compete with each other — high speed and deregulated competition. Deregulation is the lofty ideal of neoliberal economy and could be translated as the lack of any meta-control over these trading actions. Financial liquidity is desired and a seamless flow of data is required. There are undeniable relations between Milton Friedman's influential economic theories of free market — in a nutshell, the belief in laissez-faire government policy — and global politics: this is what Naomi Klein calls "disaster capitalism".[16] The very efficiency of how financial markets work "turns out to be utterly dysfunctional".[17] In case things escalate too fast and uncontrolled, the only way to stop these processes is to plug out the electrical power of the market's infrastructural machines. Most other creations of man-made highly skilled pieces of collaborative engineering have built-in security measurements, small circuit breakers to prevent overloads, malfunctions, breakdowns, deadlocks, mostly based on positive feedback loops. But financial markets avoid these things — because they are not profitable. Pathologic growth and cancerous excrescence of capital including crashes and disasters here are wanted effects. We are not only living in a "society of control",[18] but in a society of the controlled planning of uncontrolled crises. Wired capital in its purest meaning.

CRITICAL SELF-DESIGN AT THE HORIZON

The only way to reclaim our powers against Wark's "Vectorialist class" is to reclaim the power to "self-design" [19] — not so much as a forced obligation but pro-actively, comprehensively. Our everyday life is mostly determined by stuff we didn't design ourselves, but we need to design stuff by ourselves. This could lead to a redesign of our socio-technical and ecological environment, the creation of alternative currencies, the development of new forms of exchange and inhabiting. In short a technologically and algorhythmically-informed way of commoning.[20] Consider solidarity and fairness as parameters and

create alternative networks undermine existing ones. Thus, we need to know more about how to control the wiring. We need to learn to play with the fire in the wire, control its rhythms, and its usages. Being wired here means becoming awake, aware — not just superficially, but with deep knowledge about the electronic guts of 'communicative capitalism'. We need to reclaim time and space to do real life experiments — not to detach ourselves from capitalist networks, but build better ones. Growth is not intrinsically bad — yet it is not linear, but cyclical. We need to create more toys of co-living and not instruments of power. Being wired in the meaning of being crazy and maybe excessive is still possible — as long you don't harm anybody and respect your environment of people, things, machines, algorithms, organisms. Always leave a door open for those entities: those who want to escape and those who want to take part.

NOTES

[1] Marx, Karl. (1894) *Das Kapital*. Hamburg : Verlag von Otto Meisner. For the reference to the telegraph and the relation between improved communication and capitalism, see page 164 of the English edition published by Penguin in 1981 translated by David Fernbach.

[2] Dean, Jodi. (2012) *The Communist Horizon* London/New York : Verso. P.72

[3] Jodi Dean, *The Communist Horizon* (London/New York: Verso, 2012), 144.

[4] Ibid., 216.

[5] Andrew Blauvelt, ed., Andrew Blauvelt, ed., *Hippie Modernism: The Struggle for Utopia* (Minneapolis: Walker Art Center, 2015).

[6] Benjamin H. Bratton, Benjamin H. Bratton, *The Stack: On Software and Sovereignty* (Cambridge, MA: MIT Press, 2016), 66.

[7] Alexander R. Galloway, Alexander R. Galloway, *Protocol — How Control Exists after Decentralization* (Cambridge, MA: MIT Press, 2004).

[8] Shintaro Miyazaki, "Going Beyond the Visible: New Aesthetic as an Aesthetic of Blindness?," in Shintaro Miyazaki, "Going Beyond the Visible: New Aesthetic as an Aesthetic of Blindness?," in *Postdigital Aesthetics: Art, Computation And Design*, ed. David M. Berry and Michael Dieter (New York, NY: Palgrave Macmillan, 2015), 219–31; Shintaro Miyazaki, "AlgoRHYTHMS Everywhere — a Heuristic Approach to Everyday Technologies," ed. Birgitte Stougaard and Jan Hein Hoogstad, *Pluralizing Rhythm: Music, Arts, Politics*, no. 26 (2013): 135–48; Shintaro Miyazaki, "Algorhythmics: Understanding Micro-Temporality in Computational Cultures," *Computational Cultures. A Journal of Software Studies* 2 (2012).

[9] Henri Lefebvre, *Rhythmanalysis: Space, Time and Everyday Life, [Élements de Rythmanalyse, Paris: Édition Sylleps 1992]* (London/New York: Continuum, 2004).*Rhythmanalysis: Space, Time and Everyday Life, [Élements de Rythmanalyse, Paris: Édition Sylleps 1992]Ibid.*

[10] Miyazaki, "Going Beyond the Visible: New Aesthetic as an Aesthetic of Blindness?," 224.

[11] Ibid., 223.

[12] Marshall McLuhan and Quentin Fiore, *The Medium Is the Massage: An Inventory of Effects* (New York: Bantam Books, 1967).

[13] Friedrich A. Kittler, "Protected Mode," in *Literature, Media, Information Systems: Essays.*, ed. John Johnston (Amsterdam: G & B Arts International, 1997), 157–68.

[14] Mckenzie Wark, "INFORMATION WANTS TO BE FREE (BUT IS EVERYWHERE IN CHAINS)," *Cultural Studies* 20, no. 2–3 (2006): 173.

[15] Ibid., 172.

[16] Naomi Klein, *The Shock Doctrine: The Rise of Disaster Capitalism*, 1st edition (New York: Picador, 2008).

[17] Joseph Vogl, *The Specter of Capital* (Stanford, California: Stanford University Press, 2014), 119.

[18] Gilles Deleuze, "Post-Scriptum Sur Les Sociétés de Contrôle," in *Pourparlers (1972–1990)* (Paris: Les Éditions de Minuit, 1990), 240–47.

[19] Boris Groys, "The Obligation to Self-Design," *E-Flux Journal* 0 (Nov/ 2008), http://www.e-flux.com/journal/00/68457/the-obligation-to-self-design/.

[20] David Bollier and Silke Helfrich, eds., *Patterns of Commoning* (Amherst, MA: Levellers Press, 2015).

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